Appendix B: Income taxation and economic growth

Economists agree unanimously that higher tax rates have a negative effect on economic growth.

Romer and Romer (2010)[i] find that exogenous tax increases have a negative effect on real GDP. The maximum effect of a tax increase equivalent to 1 percent of GDP is a fall in output by almost 3 percent after 10 quarters. Tax increases have a very large and sustained negative effect on output.

To understand why output declines, Romer and Romer (2010)[ii] find that a tax increase (tax on labor and capital) of 1 percent of GDP leads to a 2.55 percent fall in personal consumption expenditures, a 11.19 percent fall in gross private investment. Exports rise substantially and imports fall. The rise in net exports is consistent with the tax increase lowering interest rates and hence reducing capital inflows.

These results are also consistent with the findings of Blanchard and Perotti (2002)[iii] and Mountford and Uhlig (2009).[iv] Investment falls in response to both tax increases and government spending increases. Consumption does not rise significantly in response to a fiscal policy change. Government spending increases have a negative effect on the real wage of workers.

In addition, the economics literature shows that tax policies which penalize investment are more harmful to productive economic activity than taxes on consumption (see, Arnold et al., 2011[v]; Gemmell et al, 2011[vi]; Romer and Romer, 2010[vii]; Blanchard and Perotti, 2002[viii]; Padovano and Galli, 2001[ix]; Bleaney et al., 2001[x]; Mullen and Williams, 1994[xi]).

[i] Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review*, 2010, 100 (3): 763-801. https://eml.berkeley.edu/~dromer/papers/RomerandRomerAERJune2010.pdf

[ii] Ibid.

[iii] Blanchard, O. and Perotti, R., “An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output,” *Quarterly Journal of Economics*, 2002, 117(4): 1329–1368

[iv] Mountford, A. and Uhlig, H., "What are the effects of fiscal policy shocks?," *Journal of Applied Econometrics*, 2009, 24: 960-992

[v] Arnold, Jens Matthias, Bert Brys, Christopher Heady, Åsa Johansson, Cyrille Schwellnus, and Laura Vartia, "Tax Policy for Economic Recovery and Growth," *Economic Journal*, 2011, 121, no. 550: 59-80.

[vi] Norman Gemmell, Richard Kneller, and Ismael Sanz, "The Timing and Persistence of Fiscal Policy Impacts on Growth: Evidence from OECD Countries," *Economic Journal*, 2011, 121, no. 550: 33-58.

[vii] Christina D. Romer & David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks."

[viii] Blanchard, O. and Perotti, R., "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output."

[ix] Padovano, F. and Galli, E., "Tax Rates and Economic Growth in the OECD Countries (1950-1990)," *Economic Inquiry*, 2001, 39, no. 1: 44-57.

[x] Michael Bleaney, Normal Gemmell, and Richard Kneller, "Testing the Endogenous Growth Model: Public Expenditure, Taxation, and Growth Over the Long Run." *Canadian Journal of Economics* 34, 2001, no. 1: 36-57.

[xi] John Mullen and Martin Williams, "Marginal Tax Rates and State Economic Growth." *Regional Science and Urban Economics*, 1994, 24, no. 6: 687-705.